

California Global Warming Solutions Act of 2006  
**GHG Reporting Tool Training**  
**Cement Plants (CPs)**

California Air Resources Board  
 March 26, 2009

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## Participation Information

- Webinar Registration Information  
 (need to pre-register to participate)  
<https://www2.gotomeeting.com/register/345537296>
- Slides for Today's Training:  
<http://www.arb.ca.gov/cc/reporting/ghg-rpt/ghg-tool.htm>
- Stepwise Reporting Tool Guidance for GSCs:  
<http://www.arb.ca.gov/cc/reporting/ghg-rpt/ghgstepwiseegsc.pdf>
- Regulation and Staff Report  
 (includes Regulation and other materials):  
<http://www.arb.ca.gov/regact/2007/GHG2007/GHG2007.htm>

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## Using the Webinar

- Preregistration is required, see previous slide for link
- For Audio, each participant has a unique dial-in and access code
  - Numbers visible after joining webinar
  - Must enter Audio PIN to join audio
  - Call is billed as normal long-distance call
- ARB staff will mute/and unmute lines
  - "Raise Hand" to have your line activated for verbal questions
- Type questions into Chat box for text questions

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## Additional Reporting Tool Training (see training website for materials)

Reporting Sector	Date	Time (PDT)
General Stationary Combustion	March 17	10:00 a.m. to 12:00 p.m.
Cement Plants	March 26	10:00 a.m. to 12:00 p.m.
Electricity Retail Providers & Marketers	March 26	1:00 p.m. to 3:00 p.m.
Electricity Generating & Cogeneration Facilities	March 27	10:00 a.m. to 12:00 p.m.
Refineries & Hydrogen Plants; Oil & Gas Production	March 30	9:30 a.m. to 12:30 p.m.

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## Agenda

- Introduction and Overview
- Summary of Requirements
- Reporting Tool Overview
- Case Study – Basic Facility
- Wrap-up

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## Preparing for Reporting

- 2009: Must report 2008 emissions in 2009
  - See Regulation and Guidance for methods
  - Reports due June 1, 2009
  - Verification is optional for 2009 emissions reports
- 2010: Emissions data report must meet full requirements of the regulation
  - Monitoring equipment, procedures should be in place by January 1, 2009
  - Everyone must verify their 2009 emissions data reports in 2010
- See Regulatory Advisory
  - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghgschedadvisory.pdf>

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## Purpose of this Training

- Demonstrate use of GHG Reporting Tool for reporting
- Assumes basic understanding of reporting requirements
  - Will not discuss GHG calculation methods
  - Refer to extensive Guidance Documents for questions about calculating GHG emissions
    - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep-guid/ghg-rep-guid.htm>
  - Also see Cement Plant reporting workshop slides presented in December 2008 for an overview
    - <http://www.arb.ca.gov/cc/ccci/meetings/meetings.htm>

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## Summary of Reporting Requirements for Cement Plants (CPs)

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## Background

- The regulation requires CPs to estimate & report their GHG emissions
- CPs are defined in the GHG regulation as:
  - Industrial structures, installations, plants, or buildings primarily engaged in manufacturing Portland, natural, masonry, pozzolanic, and other hydraulic cement

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## Reporting Requirements

- Fuel use, by fuel type for facility
  - Provide fuel use by individual process units where separately metered
- Stationary combustion emissions by type (i.e., CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O)
  - CO<sub>2</sub> from biomass fuels reported separately
  - Emissions subdivided for each fuel used
- Process CO<sub>2</sub> emissions from cement manufacturing

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## Reporting Requirements (Con't)

- Process, feedstock, and production data
  - Total Organic Carbon (TOC) content of raw materials
- Emissions from on-site electricity generation or cogeneration units
- Indirect energy use (electricity, heat, cooling)
- Fugitive CH<sub>4</sub> emissions from coal fuel storage
- Cement efficiency metrics

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## GHG Reporting Tool Overview

### Cement Plants (CPs)



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## GHG Reporting Tool

- GHG Reporting Tool designed to directly address needs of reporters
- Provides reporting, QA, certification, tracking, and verification access
- Allows password-protected access by multiple facility users
- Training Site available for practice
- Shares software platform used by U.S. EPA and The Climate Registry

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## General Usage of the Tool

### Using the GHG Reporting Tool Year 1 – 2008 Report Year

1. Register Your First Facility & User Account (Home Page)
2. Register Additional Facilities (Inside Tool)
3. Complete Basic Facility Information
4. Set Up Additional Users
5. Create Annual Report Structure (Emitting Activities, Units...)
6. Enter Annual Data for 2008
7. Submit Annual 2008 Report

❖ Complete reports must be certified, and then verified as specified in the regulation.

❖ Verification is optional for reports submitted in 2009

### Using the GHG Reporting Tool Year 2 – 2009 Report Year

1. Update Annual Report Structure If Needed.
2. Enter Annual Data for 2009
3. Submit Annual 2009 Report

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## Step 1: Preparing for Reporting

- Review Reporting Tool Primer
  - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-tool.htm>
- Review step-by-step guidance for GSC reporting using tool
  - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghgstepwisegsc.pdf>
- Collect Facility Information
  - Equipment subject to reporting
  - Fuel use records (facility level & by meter)
  - Purchase records for electricity, heat, cooling

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## Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
4. Input facility configuration for reporting
  - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production data
7. QA and Certification of data

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## Workflow for Reporting Tool

2. Register using ARB ID and Access Code
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## Step 2 Register using ARB ID and Access Code

- Use ARB ID and Access Code provided by ARB
- You must “Register” first, use the Registration button, not “Login”
- The first person to register is the default Facility Manager
  - Facility Manager certifies data as complete and accurate
  - Two people may be designated as Facility Managers

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## Step 2 Create Account

- Enter name, address, email
- Email address must be unique
  - If email address is already in system, use that account to associate with additional facilities
    - “Register Additional Organization” after login
- Create personal User ID and Password
  - Login using this information
- Accept User Agreement
- Account is created

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## Registration

CA.GOV California Environmental Protection Agency  
AIR RESOURCES BOARD

Welcome to the California Air Resources Board's Online Greenhouse Gas (GHG) Reporting Tool.

The reporting tool has been designed to meet the needs of companies and agencies reporting GHGs and other information required by the State's mandatory reporting regulation. It also serves as a unified tool for facility tracking and certification of emission reports as well as data verification by third-party verifiers, as required by the regulation.

Because ARB's GHG reporting tool shares its basic software platform with existing reporting and tracking tools developed for U.S. EPA and The Climate Registry, it is also designed to ease transitions to potential regional and national reporting programs in the future.

A User Guide for the reporting tool is available at the California's mandatory reporting web page, at: <http://www.arb.ca.gov/ghgreporting/ghg-reporting-reg.htm>.

User Login

User ID:

Password:

Login

Forgot your User ID or Password

Register for an ARB login

To activate a user account for an organization, click the Register button.

Register



Home Visit ARB Mandatory Reporting Page Return to Top

Click Register button to set up your Facility and Reporting Tool user login.

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## Registration (con't)



**AIR RESOURCES BOARD**

[Contact Us](#)

### Register your organization

Complete the information below with the ARB ID and Access Code provided to your organization by ARB. Required fields are indicated by a red asterisk (\*).

If you have not received a letter from the ARB and have questions regarding the application, please select the Contact Us link at the top of the page.

**Enter Information**

Already a User?  Select No. If Yes (already user) proceed to log in to the GHG Emissions Reporting Tool.

Organization Type:  Select "Facility"

ARB ID:  ARB ID and Access Code for your facility provided by ARB via letter.



Access Code:

Click Next button to proceed with the GHG Emissions Reporting Tool registration.

[Home](#) : [Visit ARB Mandatory Reporting Page](#) : [Return to Top](#)

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## Registration (con't)



**AIR RESOURCES BOARD**

[Contact Us](#)

### Complete User Registration

**Enter Information**

First Name:

Last Name:

Address:

City:

State:

Postal Code:

Enter all required fields.

Important: To complete registration, enter a valid email address.

Email Address:

Re-enter email address:

Email Substitutions (e.g., EOE Seattle):

Create your User ID:

Create your password:

Re-enter password:

Click the Next button to proceed with user registration.

[Home](#) : [Visit ARB Mandatory Reporting Page](#) : [Return to Top](#)

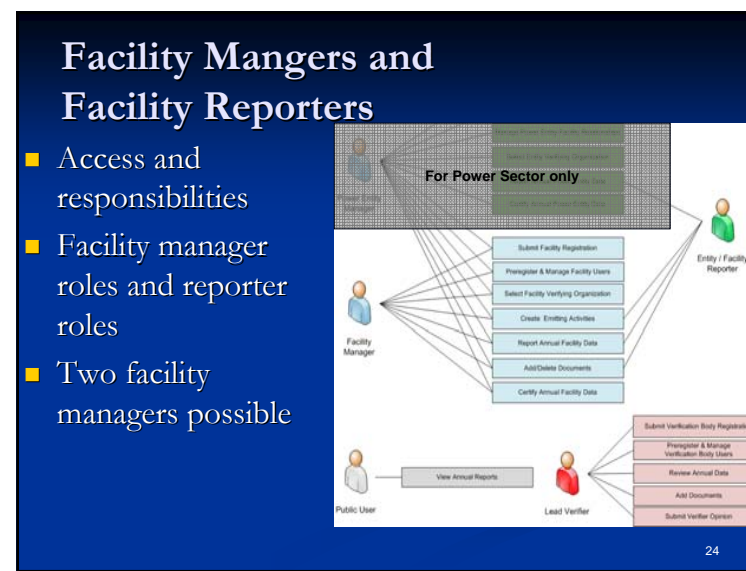
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## Step 3

### Input Facility Descriptive Info

- Login to account with personal User ID and password (not ARB ID)
- Facility Details
  - Primary & Secondary Sector
  - Confidential data flag
- Addresses
  - Mailing and physical
- Geographic Location (lat/long)
  - <http://www.batchgeocode.com/lookup/> (example only)
- Contacts (i.e., Users)
  - Allow others access to facility data

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## Facility Information

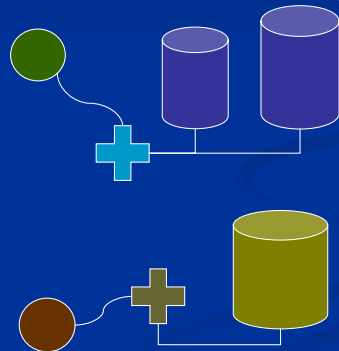
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## Step 3: Demonstrate Input of Facility Info

**Note:** Full demonstration of Step 2 is available from the GSC Webinar at:  
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-tool.htm>

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## Case Study Basic Facility

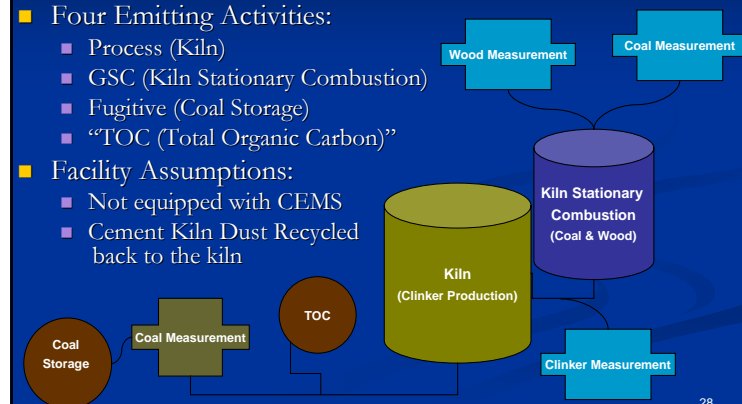


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## Case Study

### Basic Facility Reporting

- Facility Configuration
- Four Emitting Activities:
  - Process (Kiln)
  - GSC (Kiln Stationary Combustion)
  - Fugitive (Coal Storage)
  - "TOC (Total Organic Carbon)"
- Facility Assumptions:
  - Not equipped with CEMS
  - Cement Kiln Dust Recycled back to the kiln



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## Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
4. Input facility configuration for reporting
  - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production
7. QA and Certification of data

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## Step 4

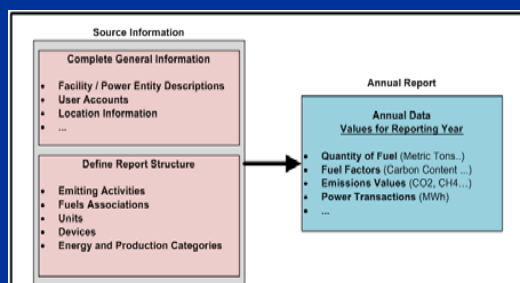
### Input Facility Configuration

- Emitting Activities
  - And associated fuels
- Devices (i.e., fuel meters)
  - And associated fuels (as applicable)
- Generating Units
  - Electricity or Cogeneration
- Energy and Production
  - Indirect energy use data
  - Cement efficiency metrics data
  - Electricity or Cogen info (as applicable)

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## Sequence for Reporting

- A. First, set up emitting activities and fuels, generating units, devices (Step 4)
- B. Next, add fuel use, fuel factors, and emissions for items designated in Part A (Step 5)



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## Summary of Key Terms

- **Emitting Activity**
  - Equipment or process with capacity to produce GHG emissions
  - Can be individual activities (e.g., one cement kiln) or a complete reporting category (e.g., all facility stationary combustion)
  - Must meet 95% accuracy unless de minimis emissions
- **Device**
  - Used to indicate the presence of a fuel meter used for reporting fuel use, not emissions
  - Not a source of emissions and not a piece of emitting equipment
  - Not required to meet 95% accuracy unless used for emissions calculations

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## Adding Emitting Activities & Fuels/ Feedstocks

Facility Details	Addresses	Geographic Location	Contacts	Associated Entity	Verification Bodies	Emitting Activities	Generating Units
Devices	Energy and Production	Facility Documents	Facility and Unit Submissions	ARB Notifications			

Emitting Activity Name	Emitting Activity Category	Activity Type	Status	Aggregation Level
Coal Storage	Fugitive	Coal Storage	Operating	Summed
Kiln - Clinker Production	Process	Rotary Kiln	Operating	Summed
Kiln Stationary Combustion	Stationary Combustion	Rotary Kiln	Operating	Summed
TOC	Process	Rotary Kiln	Operating	Summed

- Regulation requires separate reporting for:
  - kiln & non-kiln units
  - Generating & cogeneration units
- Recommended that multiple kilns be set up as separate emitting activities
- Setup Total Organic Carbon (TOC) as an "Emitting Activity"

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## Emitting Activity Category

California Environmental Protection Agency  
AIR RESOURCES BOARD

My Profile Contact Us Log Out

Facility Annual Reporting

Logged in as Michael Taylor

### Edit Emitting Activity

Use this page to edit an emitting activity. Enter the required fields below, and associate fuels more fuels from the Available Fuels list and use the arrow controls to move them to the Current Fuels list.

1) Unique Emitting Activity Name is used to aid in inventory analysis.  
2) Emitting Activity Category and Type are used to categorize your emissions and fuels data.  
3) The Status field establishes whether this activity is currently operating for your source.  
4) Aggregation Level is used to establish a hierarchy of your data.  
a) Use Summed for all emitting activities representing the total emissions for your facility.  
b) Supplemental refers to additional emitting activities which you do not want included any.  
c) Optional data refers to all emitting activities for which you are not required to report on.  
5) The fuel list is limited to fuels, feedstocks, and other inputs available for your emitting activity.

Facility:  
Facility Name: Quabro L3  
APR ID: 4321

Edit Emitting Activity:  
Emitting Activity Name: Clinker Production  
Emitting Activity Category: Process  
Activity Type: Stationary Combustion  
Status: Operating  
Aggregation Level: Summed  
Available Fuels (fuels, Feedstocks, or Other):  
Current Fuels (fuels, Feedstocks, or Other):

Each emitting activity is categorized as to type of emissions - stationary, process, fugitive, etc.

### CEMS

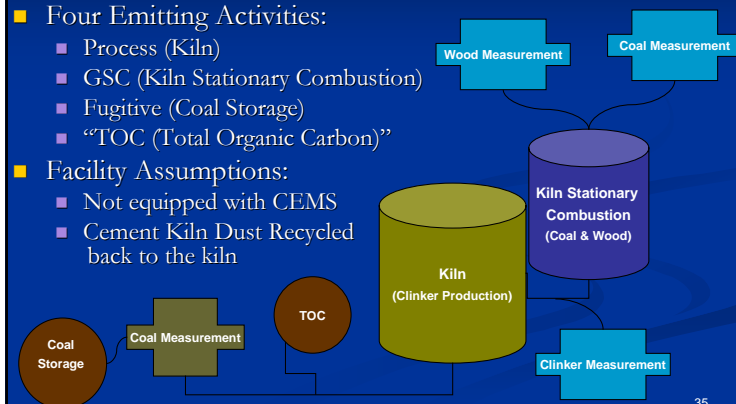
- Equipped:** select Stationary Combustion and Process to report kiln process and combustion emissions under the same emitting activity
- Not Equipped:** set up separate Process and Stationary Combustion emitting activities

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## Case Study

### Basic Facility Reporting

- Facility Configuration
- Four Emitting Activities:
  - Process (Kiln)
  - GSC (Kiln Stationary Combustion)
  - Fugitive (Coal Storage)
  - "TOC (Total Organic Carbon)"
- Facility Assumptions:
  - Not equipped with CEMS
  - Cement Kiln Dust Recycled back to the kiln



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## Step 4: Demonstrate Input Facility Configuration

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## Workflow for Reporting Tool

2. Register using ARB ID and Access Code
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  - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production data
7. QA and Certification of data

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## Step 5

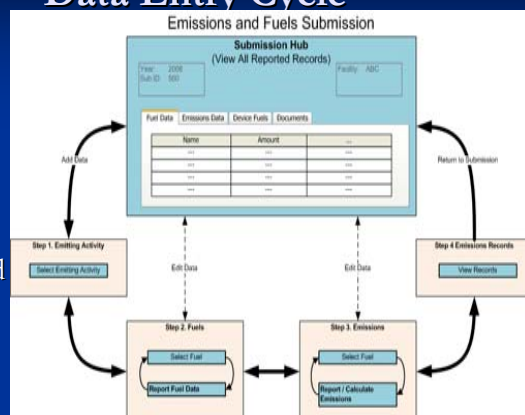
### Input Fuel Use and Emissions

- Beginning with Annual Reporting menu, select each emitting activity
- Select each fuel for emitting activity
- Input fuel use for each fuel
  - Input emissions calculation data (i.e., emission factors, HHV, carbon content)
- Select calculation method; input emissions data
- Repeat for each emitting activity until finished
- Keep track to ensure completion

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## Step 5: Fuel Use and Emissions Data Entry Cycle

- For each emitting activity, cycle through each fuel, and input fuel use and emissions data



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## Background for Reporting Fuel Use & Emissions Data

- CO<sub>2</sub> sampling and testing for fossil fuels is required by the regulation (Section 95110(d))
  - Except for Biomass Solids and Start-Up Fuels, for which default emission factors may be assigned
- If default emission factors are allowed by the regulation for the selected fuel, you may choose to utilize the default Carbon Content and High Heat Content, etc. values
  - You may also exercise this option for methane and nitrous oxide emissions factors

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## Estimating Process Emissions via the Clinker-Based Methodology (CBM)

- If the CBM is utilized, then within the tool:
  - Custom Factor 1 =  $EF_{Cl}$  (clinker emission factor)
  - Custom Factor 2 = CKD (cement kiln dust)
  - Custom Factor 3 =  $EF_{CKD}$  (CKD emission factor)
- Note: if the cement kiln dust is recycled back to the kiln, then the computation and use of the  $EF_{CKD}$  & CKD variables are not required
  - Adjust the equation accordingly
  - Custom Factors 2 & 3 are reported as 0

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## Estimating Process Emissions via the CBM (Continued)

- Reporting of additional data, not currently captured by the tool, is required
- Upload a supporting document showing the derivation of your plant-specific clinker emission factor
  - The following should be provided:
    - Lime (CaO) content of clinker (percent)
    - Magnesium oxide (MgO) content of clinker (percent)
    - Non-carbonate CaO (percent)
    - Non-carbonate MgO (percent)
  - This will address regulation sections 95110(a)(2)(A)(1.)(b)-(e)

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## TOC Background

- To estimate & report TOC in your raw materials, then within the tool:
  - Custom Factor 1 =  $TOC_{RM}$  (0.2% Organic carbon content of raw material)
  - Custom Factor 2 =  $CO_2$  to carbon molar ratio
- Custom Factors 1 and 2 are reported as 0.002 and 3.664, respectively (1)
- Select Other for both Custom Factors (2) and select No Unit from the UOM drop down menu for both (3)

Factor Name	Default	Value	UOM
Annual Avg Carbon Content if measured:	<input type="checkbox"/>		
Annual Avg Heat Content Btu/lb if measured:	<input type="checkbox"/>		
CO2 EF	<input type="checkbox"/>		
CH4 EF	<input type="checkbox"/>		
N2O EF	<input type="checkbox"/>		
Custom Factor 1	Other (2)	0.002	No Unit (3)
Custom Factor 2	Other (2)	3.664	No Unit (3)
Custom Factor 3	<input type="checkbox"/>		

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## Step 5: Demonstrate Input Fuel Use and Emissions

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## Workflow for Reporting Tool

2. Register using ARB ID and Access Code
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7. QA and Certification of data

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### Step 6

## Report Non-Emissions Data

- Energy and Production
  - For Cement Plants, includes electricity, heat, cooling purchased (i.e., indirect energy)
  - For reporting electricity generating units and cogen, please participate in 3/27 webinar, 10:00-12:00
  - Report Cement Efficiency Metrics
- Blue Annual Reporting Tab
  - “Create new submissions”
  - Select Energy and Production from pull-down
- Enter energy use and select provider

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### Step 6

## Report Non-Emissions Data (Con't)

- Input data for all fields under the “Cement Efficiency Metrics” tab.

Report Cement Efficiency Metrics Data

Amount Clinker *	25275	metric tons
Amount Sold Directly *	1050	metric tons
Amount Own Consumed *	5750	metric tons
Amount Added to Stock *	2500	metric tons
Type Clinker Substitute Consumed *	Gypsum	
Amount Clinker Substitute Consumed *	770	metric tons
Type Cement Substitute Consumed *	Limestone	
Amount Cement Substitute Consumed *	900	metric tons

Save

Click Save before navigating off of the Cement Efficiency Metrics tab, or the data entered will not be retained.

Enter all required fields.

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### Step 7

## QA and Certification of data

- QA checks help ensure complete reporting
- The quality assurance system provides Warning messages and Critical Errors
  - Critical Errors or Failures must be corrected before certifying data
  - “Warnings” should be evaluated to ensure that errors are not present that affect the completeness or accuracy of the submittal
- Run separate QA on Emissions and Fuels data and Energy and Production data

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## Step 7 QA and Certification of data

- After QA, then “Ready for Certification”
  - Clicking locks data and queues data for Facility Manager for final Certification
- Only those designated as a Facility Manager for the facility may certify the report
  - Completing “Certification” indicates that data are complete and accurate
  - Upon Certification, data are locked and cannot be edited without unlocking data
  - This mechanism prevents editing of data during the verification process unless needed

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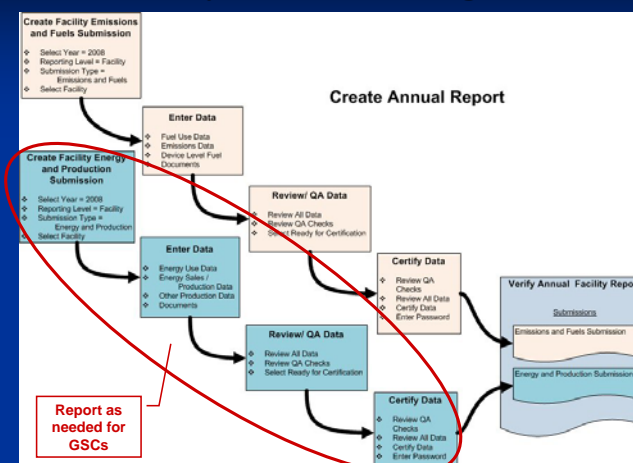
## Step 6: Demonstrate Report Energy and Production Data

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## Step 7: See reporting tool Users Guide for QA and Certification Details

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## Summary of Reporting Process



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## CPs with Cogen or Electricity Generation

- Complex facility Case Study to be demonstrated during Electricity Generation Training Friday, March 27<sup>th</sup> 10:00 a.m. to 12:00 p.m.

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## Questions and Comments

- For verbal comments, “Raise Hand” using Webinar so we can activate your line
- Or Type question in Webinar screen



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## ARB Contacts

General Email Address for Questions  
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 (916) 322-7062

GHG Mandatory Reporting Website  
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>



## Staff Contacts

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